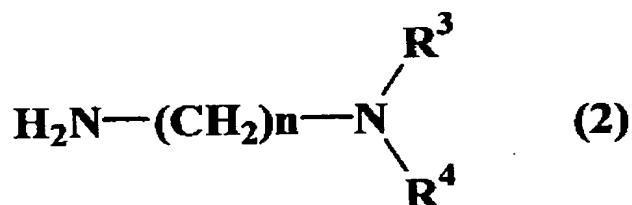


What is claimed is:

1. A production process for carboxylic amide and derivatives thereof, characterized by reacting higher fatty acid or an ester thereof represented by the following Formula (1) with diamine represented by the following Formula (2) under the presence of an organic phosphonic acid compound or adding the organic phosphonic acid compound after the reaction or after removing excess diamine after the reaction:



in Formula (1) described above, R^1 represents a linear or branched alkyl group, an alkenyl group or a hydroxyalkyl group having 5 to 23 carbon atoms, and R^2 represents a hydrogen atom, a linear or branched alkyl group having 1 to 4 carbon atoms or a residue obtained by removing one acyloxy group from glyceride;

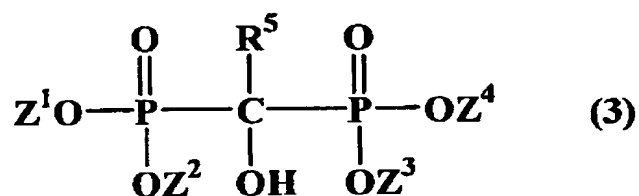


in Formula (2) described above, R^3 and R^4 represent an alkyl group having 1 to 4 carbon atoms and may be the same or different, and n represents a number of 2 to 4.

20

2. The production process for carboxylic amide and

derivatives thereof as described in claim 1, wherein the organic phosphonic acid compound is diphosphonic acid or a salt thereof having a structure represented by the following Formula (3):



5

in Formula (3) described above, R^5 represents a hydrogen atom or a lower alkyl group having 1 to 3 carbon atoms, and Z^1 , Z^2 , Z^3 and Z^4 each represent independently a hydrogen atom or an alkaline metal atom.

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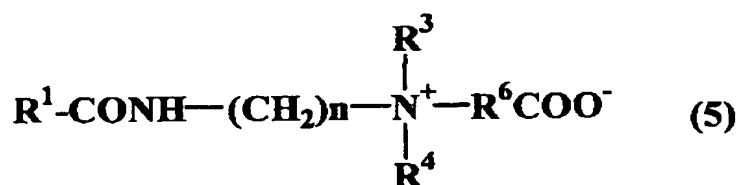
3. A production process for betaine, characterized by producing betaine represented by the following Formula (5) by reacting the carboxylic amide compound obtained by the production process as described in claim 1 or 2 with

15 monohaloalkylcarboxylic acid or a salt thereof represented by the following Formula (4):



in Formula (4) described above, Y represents a halogen atom; R^6 represents a linear or branched alkylene group

20 having 1 to 3 carbon atoms; and Z^5 represents a hydrogen atom or an alkaline metal atom;

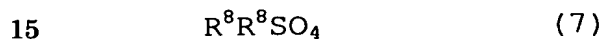


in Formula (5) described above, R^1 , R^3 , R^4 , R^6 and n are the same as described above.

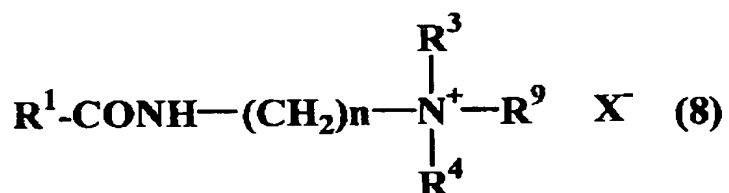
4. A production process for a quaternary ammonium salt,
 5 characterized by producing a quaternary ammonium salt represented by the following Formula (8) by reacting the carboxylic amide compound obtained by the production process as described in claim 1 or 2 with alkylhalide represented by the following Formula (6) or
 10 dialkylsulfate represented by the following Formula (7):



in Formula (6) described above, Y represents a halogen atom, and R^7 represents an alkyl group having 1 to 4 carbon atoms;

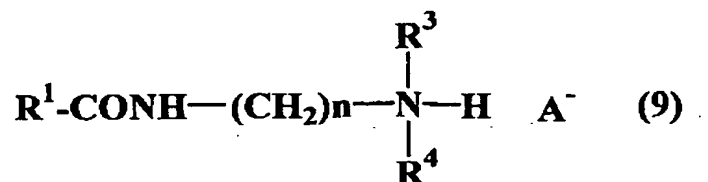


in Formula (7) described above, R^8 represents an alkyl group having 1 to 4 carbon atoms;



in Formula (8) described above, R^1 , R^3 , R^4 and n represent the same meanings as described above; R^9 represents R^7 or R^3 ; and X represents Y or R^8SO_4 .

- 5 5. A production process for an amine salt,
characterized by producing an amine salt represented by
the following Formula (9) by neutralizing the carboxylic
amide compound obtained by the production process as
described in claim 1 or 2 with at least one neutralizing
10 agent selected from organic acids, inorganic acids and
acidic amino acids:



- 15 in Formula (9) described above, R^1 , R^3 , R^4 and n represent the same meanings as described above, and A represents organic acid, inorganic acid or acidic amino acid.